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A. C. True, Director.

# WHAT THE DEPARTMENT OF AGRICULTURE IS DOING FOR IRRIGATION.

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The passage of the National Irrigation Act was one of the most significant events of the last session of Congress, and is destined to have a far-reaching influence in increasing population in the arid States and in shaping the laws and customs under which their people will live and work. It shares with the Panama Canal in public interest. The bureau which has its administration in charge has before it great responsibilities and great opportunities, and it is the duty of all friends of irrigation to contribute in every way possible to the success of its labors. This requires that there shall be moderation, patience, and cooperation with those intrusted with the work. The making of surveys and preparation of plans is a labor which requires time and ought not to be hurried. Harmony and public spirit are essential, and every one who has the best interests of the West at heart must seek to promote these. Speaking for the Department of Agriculture, I can say that this is the spirit and purpose with which its irrigation work is being prosecuted and will be carried on in the future.

Irrigation, however, is more than a matter of ditches and acres. The construction of irrigation works and overcoming material obstacles is only one feature of Western agriculture. After the channels are dug and the dams built, new and different issues have to be dealt with. The problems of the engineer are succeeded by those of the farmer. Irrigation is not unlike railroading. The location of the railway line, the fixing of grades, and the laying of the track, are only the beginning of a railroad. Much of its after success depends upon the ability and judgment shown in these preliminary steps; but when the line is completed, the work of the engineer ceases and that of the passenger and traffic managers begins. The questions of rates, the questions of the relation of the road to the public welfare are then matters of vital interest, and their solution requires a different training and a different kind of ability from that which built the road.

So in irrigation. The value of the works constructed under the National Irrigation Act will, in the end, be measured by the success of the farmers who live under them, and the success of the farmers depends in large measure upon the skill and economy with which water is used, and upon rights to water being established and protected. Just and effective water laws and proper officials to administer these laws are as much a part of an irrigation system as ditches and dams. The building of National irrigation works is destined to make this more apparent than it has been in the past, because when there is an abundance of water in the stream there is no need of public control; but when we seek to use not only the natural flow but to store the floods and to water farms stretching for hundreds of miles along rivers, and even across State boundaries, the distribution of the water supply, so that each one will be assured of his proper share, is a problem in administration as complex and important as that which confronts the managers of the great trunk railway lines. The value of the irrigated farm and the pleasure and profit of the farmer depend in large measure on men being able to till their fields without having to watch the stream to see that some one does not steal their water supply. Stable water rights and proper protection are as essential to the success of irrigation as are stable railroad rates to the prosperity of the business world.

The Department of Agriculture is the branch of the Government created to promote the growth of rural populations and to foster conditions which will make farm life pleasant and prosperous. This Department is, therefore, vitally concerned with irrigation, because it is the foundation of agriculture in nearly one-half of the country, and is the means by which a balance in population between the East and West can be brought about and the demands of our growing trade with the Orient fully supplied. There are several bureaus of the Department which deal with questions relating to irrigation, and especially to the prosperity of the arid region, in which valuable work is being done. But I wish to speak particularly of the irrigation investigations carried on by the Office of Experiment Stations, which deal with the agricultural and economic questions which must be solved in order to lay an enduring foundation for the future agricultural life of the arid West. This Office supervises the expenditures of the fund provided for agricultural research in the different States, under which $15,000 go annually to each agricultural experiment station in the arid region. It is also charged with the promotion of agricultural education throughout the Union. Its irrigation work brings a closer association between what is being done by the State and what is being done by the Nation, and is an agency for securing harmony and cooperation in working out the perplexing questions which confront the State and Nation in the control and use of water supply.

Dr. A. C. True, the Director of this Office, has for many years been

an active and earnest friend of irrigation development. He realizes that it is the foundation of Western agriculture, and has used his influence with State boards of agriculture and trustees of agricultural colleges to give it the largest possible recognition in their work. Irrigation investigations carried on under this Office help to broaden the work of the State stations and furnish information for Congress and the whole country regarding both the problems and possibilities of the arid West. It occupies, therefore, a distinct field. It is working to promote the success of National works by helping farmers to use water with more skill and success. It is aiding the States in studying the causes which have made water right litigation so costly and harassing and by the publication of reports is helping to bring about a better understanding of the issues involved and a more speedy and lasting settlement of these questions. In this work have been enlisted the irrigation experts of every one of the agricultural colleges of the West and the cooperation of all of the State engineers' offices. The experience and results of widely separated localities are being brought together, and irrigators of one section are being shown what has been learned elsewhere.

The most valuable work of the Office, however, is its studies of irrigation laws and institutions. The character of rights to water established by law will do more than all other influences combined to determine whether Western farmers are to be tenants or proprietors. Every acre of land irrigated ought to have a right to the water it requires. In this way the owner of every home will be secure and water monopolies be impossible. The disposal of the water resources of the West should be hedged about with every safeguard that wisdom or experience can suggest, and to do this there is need at the very outset of a full understanding of the existing situation. The first thing needed is the facts; the next thing is an enlightened public sentiment which will make the right use of them. We need to know what has been done by private enterprise in the past. We need to fully understand all the merits and defects of State irrigation codes. We need to know the extent of the water supply. This the Geological Survey is determining. Then, we need to know what are the character of the rights to that supply, and this the Office of Experiment Stations is studying. Making these investigations under the National authority gives them an impartial character and shows to Congress and to the States the vital relation of State laws already enacted to the welfare of irrigators.

The wisdom of Congress in guaranteeing the protection of rights already established and in making State laws governing the rights to water supreme, will, I believe, be vindicated by the future, because in a matter so vitally affecting the welfare of the home as the control of the water supply, changes in laws should come through the action and consent of those most concerned. The need, however, of a larger meas-

ure of public supervision over streams is becoming more and more manifest.

The great demand for water for irrigation purposes, the greater need of cities and towns for domestic uses, the importance of streams in the generation of power, are making it absolutely necessary that some simple and final method of protecting rights to streams shall be provided. The Office of Experiment Stations is endeavoring to bring this about and with the most encouraging results. No feature of these investigations has met with more appreciative recognition than the study of water-right problems. The value of what has been done is not to be measured, however, by the results already achieved, because all educational influences must be slow in their operation. The real value of the work being done by the Office can only be told by its future influence on the social and industrial life of the West.

The irrigation work of the Department of Agriculture supplements its work along other lines in the arid region. It goes along with the Bureau of Plant Industry in its efforts to bring about a better management of the grazing areas; with the Bureaus of Chemistry and Soils in their studies of soils and water; and with the Weather Bureau in its measurement of rains and snows.

Nor is its irrigation work confined to the arid region. It is an essential part of the Department's work in the humid East. It is showing that irrigation is a benefit rather than a drawback, and is helping the farmers of that section to make use of it. Nothing is more significant than the rapidly growing demand for information and advice about irrigation which is coming from Eastern farmers. Letters from every State in the Union not only manifest an active desire to know more about irrigation in the arid West, but how it can be applied as an aid to production in the East. The answering of these inquiries and the furnishing of this advice is destined to be an important factor in promoting the success of agriculture throughout the country, and in strengthening the demand for land and water under the works which the Nation is to build.

Recommended for publication.

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Approved:

James Wilson,
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